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10/033,583	12/20/2001	Masayuki Kawata	S004-4508	9180

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EXAMINER

MONDT, JOHANNES P

ART UNIT 2826

PAPER NUMBER

DATE MAILED: 12/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/033,583	KAWATA, MASAYUKI
Examiner	Art Unit	
Johannes P Mondt	2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

THE MAILING DATE OF THIS COMMUNICATION:

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 06 October 2003.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-16 is/are pending in the application.
4a) Of the above claim(s) 16 is/are withdrawn from consideration.
5) Claim(s) _____ is/are allowed.
6) Claim(s) 1-15 is/are rejected.
7) Claim(s) _____ is/are objected to.
8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) The translation of the foreign language provisional application has been received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) Notice of References Cited (PTO-892) 4) Interview Summary (PTO-413) Paper No(s). ____ .
2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) Notice of Informal Patent Application (PTO-152)
3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ . 6) Other: ____ .

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of the Group I invention, i.e., claims 1-15, in the Response filed 10/06/2003 is acknowledged.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority based on applications filed in Japan on 12/21/2000 and 12/06/2001. It is noted, however, that applicant has not filed certified copies of the applications as required by 35 U.S.C. 119(b).

Information Disclosure Statement

The examiner has considered the items listed on the Information Disclosure Statement filed 07/08/2002. Please find a signed copy of Form PTO-1449 enclosed with this official action.

Claim Objections

3. **Claims 4-6** are objected to because of the following informalities: "with being curved" (line 3 of claim 4, line 3 of claim 5, line 3 of claim 6) should be replaced by "in a curved state". Appropriate correction is required.

4. **Claims 10-15** are objected to because of the following informalities: "attachment part" (line 7 of claim 10, line 7 of claim 11, line 7 of claim 12, line 7 of claim 13, line 7 of claim 14, line 7 of claim 15) should be replaced by "attachment portion". Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. **Claims 1-15** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, with reference to the Academic Press Dictionary of Science and Technology, Ed. C. Morris, Academic Press (New York 1992) the limitation "with a curvature axis as the vertex" (lines 7 of claims 1 and 2, respectively) is indefinite: "vertex" is defined (outside the fields of graph theory and celestial mechanics) as: (a) the point at which two lines or rays intersect to form an angle, (b) a point at which two sides of a polygon meet or at which three or more faces of a polyhedron intersect, (c) a point on a curve at which the curvature has a maximum or minimum, (d) the point at which the lines generating a conic surface intersect. Of the aforementioned meanings (a) through (d), (a) is indefinite in the underlying case because the two lines are undefined, (b) is indefinite because the polygon as well as the two sides of said polygon are undefined, (c) is impossible, because the curvature axis

cannot lie on the curve itself, and (d) is indefinite because a conic surface has not been defined.

7. **Claims 2, 5, 8, 11 and 14** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The said straight line portion is part of the film liquid crystal device as claimed, because of lines 2-10; however, according to lines 10-12 said straight line portion is not part of the film liquid crystal device, instead the film liquid crystal device being connected to said straight line portion. Therefore, the straight line portion is both part and not part of the film liquid crystal device, rendering claim 2, and dependent claims 5, 8, 11 and 14 indefinite.

8. **Claims 7-9** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the wording "wherein the first holding member holds the film liquid crystal device with the being curved by a stepped portion" leaves indefinite what it is that is "being curved".

9. **Claims 4-6** recite the limitation "the curved surface of the film liquid crystal device" in lines 5-6 of claim 4, lines 5-6 of claim 5, lines 5-6 of claim 6. There is insufficient antecedent basis for this limitation in the claim.

10. **Claims 10-15** recite the limitation "the curved surface" in line 3 of claim 10, line 3 of claim 11, line 3 of claim 12, line 3 of claim 13, line 3 of claim 14 and line 3 of claim 15. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. ***Claims 1, 3, 4 and 6*** are rejected under 35 U.S.C. 102(b) as being anticipated by Wakita et al (5,307,190). In spite of the aforementioned claim rejection under 35 USC 112, second paragraph, the following art rejection must be made based on the definite portion of the claim. Wakita et al teach (cf. Figures 3, 5a, and 5b):

a film liquid crystal device (liquid crystal 11 between upper and lower substrates 5/6 and 7/5/6, respectively; cf. col. 7, lines 1-13) in which crystal is injected (injection being described as letting the liquid crystal 11 drip on a UV-curable sealant 10 (cf. col. 7, lines 14-18) into a space defined by flexible substrates (both substrates 7 (resin plastic film) and 6 (alignment film formed of serum albumin) are flexible, see also col.6, I. 51-54, where it is stated that *at least* one, hence also possibly two flexible substrates are disclosed), respectively; cf. col. 7, I. 1-13) (space between sealants 31 in Figure 3, e.g., or between sealants 10 in Figures 5a and 5b, e.g.), and an injection port for the liquid crystal is sealed (by sealants 10 in Figures 5a, 5b, e.g., and by sealants 31 in Figure 3, e.g.);

arc portions (located at the central portion of the liquid crystal device as depicted in Figure 3, one central arc portion having curvature with a curvature axis located above

said film liquid crystal, the other one consisting of two portions having curvature of the opposite orientation, namely: with the curvature axis located below said film liquid device) in each of which the cross section of the film liquid crystal device has a curvature, i.e., when a part of said film liquid device is curved (in fact, it is curved along said arc portions);

a straight line portion in which the cross section of the film liquid crystal device does not have a curvature (at both ends of said film liquid device by virtue of curvature being defined as the second order derivative of the tangent along the curve with respect to the arc length, said second order derivative not being defined at said ends in Figure 3, as well as in at least two central portions by virtue of Rolle's theorem, because the curvature changes sign between the oppositely curved portions and hence must be zero in between said oppositely curved portions); and

a sealing portion (10 in Figures 5a, 5b, and 31 in Figure 3) formed in the straight line portion for sealing the injection port, being sealed (cf. col. 5, line 66 – col. 6, line 13).

In summary, Wakita et al anticipate claim 1.

On claim 3: the apparatus of claim 1 according to Wakita et al further comprises a connection terminal portion (overhang portion of glass substrate 3 in Figures 5a, 5b) to which the film liquid crystal device is connected, and wherein the connection terminal portion is provided in the straight line portion (said straight line portion being the end portion, see the rejection of claim 1 under 102(b)).

On claim 4 and 6: the apparatus of claim 1 or claim 3 according to Wakita et al further comprises a first holding member (non-overhang portion of glass substrate 3; cf. col. 7, l. 1-5) and a second holding member 4 (cf. col. 7, l. 1-5) for holding the film liquid crystal device curved, and at least two or more engagement portions 9 (cf. col. 7, l. 17-21) each of which is located in the associated top portions of the curved surface of the film liquid crystal device, carrying out engagement against the first holding member 3 (by being in pressure contact with the said first holding member through layers 4, 5 and 6; see Figure 5b), and which are provided in the associated top portions of the curved surface.

13. **Claims 2 and 5** are rejected under 35 U.S.C. 102(b) as being anticipated by Wakita et al (5,307,190). In spite of the aforementioned claim rejections under 35 USC 112, second paragraph, the following art rejection must be made based on the definite portion of the claim. Wakita et al teach (cf. Figures 3, 5a, and 5b):

a film liquid crystal device (liquid crystal 11 between upper and lower substrates 5/6 and 7/5/6, respectively; cf. col. 7, lines 1-13) in which crystal is injected (injection being described as letting the liquid crystal 11 drip on a UV-curable sealant 10 (cf. col. 7, lines 14-18) into a space defined by flexible substrates (both substrates 7 (resin plastic film) and 6 (alignment film formed of serum albumin) are flexible, see also col. 6, l. 51-54, where it is stated that *at least* one, hence either one or two flexible substrates are disclosed), respectively; cf. col. 7, l. 1-13) (space between sealants 31 in Figure 3, e.g., or between sealants 10 in Figures 5a and 5b, e.g.), and an injection port for the

liquid crystal is sealed (by sealants 10 in Figures 5a, 5b, e.g., and by sealants 31 in Figure 3, e.g.);

arc portions (located at the central portion of the liquid crystal device as depicted in Figure 3, one central arc portion having curvature with a curvature axis located above said film liquid crystal, the other one consisting of two portions having curvature of the opposite orientation, namely: with the curvature axis located below said film liquid device) in each of which the cross section of the film liquid crystal device has a curvature, i.e., when a part of said film liquid device is curved (in fact, it is curved along said arc portions);

a straight line portion in which the cross section of the film liquid crystal device does not have a curvature (at both ends of said film liquid device by virtue of curvature being defined as the second order derivative of the tangent along the curve with respect to the arc length, said second order derivative not being defined at said ends in Figure 3, as well as in at least two central portions by virtue of Rolle's theorem, because the curvature changes sign between the oppositely curved portions and hence must be zero in between said oppositely curved portions); and

a connection terminal portion (overhang portion of substrate 1 in Figures 5a, 5b) connected to the straight line portion of the film liquid crystal device.

If, in contrast with the implication of the first portion (lines 1-10) of claim 2 the straight line portion would not be an integral part of the film liquid crystal (see, however, the rejection of claims 2 and dependent claims under 35 USC 112, second paragraph),

said connection terminal portion could indeed have been said to be configured so that through it the film liquid crystal device is connected to said straight line portion.

On claim 5: the apparatus of claim 2 according to Wakita et al further comprises a first holding member (non-overhang portion of glass substrate 3; cf. col. 7, l. 1-5) and a second holding member 4 (cf. col. 7, l. 1-5) for holding the film liquid crystal device curved, and at least two or more engagement portions 9 (cf. col. 7, l. 17-21) each of which is located in the associated top portions of the curved surface of the film liquid crystal device, carrying out engagement against the first holding member 3, and which are provided in the associated top portions of the curved surface.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Johannes P Mondt whose telephone number is 703-306-0531. The examiner can normally be reached on 8:00 - 18:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J Flynn can be reached on 703-308-6601. The fax phone number for the organization where this application or proceeding is assigned is 703-308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

JPM
December 13, 2003

